Customer Case Study

Public Safety Agency Increases Crime Lab Investigators' Service Effectiveness and Responsiveness

A Cisco IP Communications solution in the Washington State Patrol crime labs enhances communication between forensic scientists and prosecutors and detectives.

EXECUTIVE SUMMARY

WASHINGTON STATE PATROL

- 42 agencies
- Approximately 3800 employees
- Four-person IT staff, with 24 technicians supporting telephone moves, adds, and changes

STATE AND LOCAL GOVERNMENT

BUSINESS CHALLENGE

- Improve service effectiveness of state crime labs
- Reduce support requirements for telephony system
- Enable interoperability with other state and local agencies' radio networks to enhance security response

NETWORK SOLUTION

- Migrated from a Token Ring network to a Cisco foundation infrastructure
- Deployed Cisco IP Communications in crime labs

BUSINESS RESULTS

- Improved pre-trial criminal justice processes by making it easier to reach crime lab investigators
- Freed IT staff to work on strategic projects rather than time-consuming moves, adds, and changes
- Improved public safety by preparing for radio communications interoperability with other state agencies

BUSINESS CHALLENGE

The Washington State Patrol is a public safety agency with oversight of traditional law enforcement, fire response, toxicology, and criminal investigations across the state. It also provides telecommunications services and operates a dispatch center for 200 to 300 other local and state agencies.

In 2003, Washington State Patrol recognized that its voice systems required significant upgrades. Each of 42 member agencies throughout the state had its own phone system, and nearly all were outdated. Maintaining spares for disparate systems was costly, and technicians had to physically travel to each site to troubleshoot or to move, add, or change a phone line. "We needed a staff of 24 technicians simply to maintain the telephone systems," says Joe Russo, the agency's communications engineering manager.

The existing phone systems also lacked productivity features such as voice mail—a major disadvantage for Washington State Patrol's crime lab employees, who conduct investigations on crimes ranging from forgeries to homicide. Each day, ongoing investigation results must be reported to prosecutors and detectives, who use the information to make informed decisions about whether to arrest, release, or prosecute. The scarcity of telephone lines into the lab—just two ordinary lines and two noisy microwave lines—and lack of voice mail made it difficult to reach forensic scientists. When scientists were busy working with evidence, secretaries had to write down and deliver messages, increasing the chance that messages could be misplaced or undelivered. "Most days I receive calls or messages from 30 to 40 different clients, including prosecutors, detectives, and hospital workers," says Matthew Gamette, forensic scientist. "Our clients expressed frustration that crime lab employees were so difficult to reach."

A separate business challenge was to ensure that the network could interoperate with other state and local networks, a capability critical to effective incident response. "For statewide telecommunications, the industry is moving toward voice over IP (VoIP) and land-mobile radio (LMR) over IP," says Clark Palmer, commander of the Electronic Services Division. "We wanted to upgrade to a standards-based network so that we could join a statewide radio system at the direction of the legislature."

NETWORK SOLUTION

Washington State Patrol met its business objectives by upgrading its core network and adopting an IP Communications solution from Cisco Systems®. "We wanted to converge our networks as much as possible," Palmer says. "By maintaining fewer systems, we would avoid redundancy, reduce costs, simplify management, and make it easier to add new capabilities to improve service effectiveness and public safety."

Cisco Foundation Infrastructure

Washington State Patrol engaged Right! Systems Inc., a Cisco® Premier Certified Partner, to upgrade its core network from Token Ring to a Cisco foundation infrastructure based on Cisco routers and Cisco Catalyst® switches. The new IP network connects the 42 offices to the data center. "The network upgrade was the agency's number-two priority going into the last legislative session," Palmer says. "Right! Systems did a fantastic job of developing a business case for several deployment scenarios. This helped us quickly answer legislators' questions, which expedited the funding process."

The Cisco foundation infrastructure, which carries voice, video, and data traffic, interoperates with a statewide digital microwave backbone that connects radio sites to the dispatch center.

IP Telephony for the Crime Labs

With its Cisco foundation infrastructure in place, Washington State Patrol was ready to begin introducing IP telephony. In the main office, Right! Systems installed a Cisco IP Communications solution, including Cisco Unity® Unified Messaging. The first sites to receive IP telephony were the crime labs in Spokane, Washington and Vancouver, Washington which received 120 Cisco IP phones. The Cisco IP Communications solution interoperates with the agency's existing microwave telephone system, enabling Washington State Patrol employees to call any other office, no matter which phone system they use.

Network Security

To protect the network against viruses, malicious attacks, and intruders, Washington State Patrol uses the Cisco Adaptive Security Appliance (ASA), which combines firewall and intrusion prevention functions, as well as Cisco Security Agent, which helps detect and stop anomalous behavior on servers and desktops. When Washington State Patrol employees visit other agencies, they can securely access their own network over either a wired or wireless connection, using a Cisco Virtual Private Network (VPN) solution.

BUSINESS RESULTS

Improved Service Effectiveness and More Efficient Criminal Justice Processes

When the forensic scientists in the crime labs began using the Cisco IP Communications solution, they noticed immediate productivity gains. "My ability to communicate with detectives and with managers of other crime labs is directly proportional to the number of cases I can finish," Gamette says. "If I have to wait three days to hear from a prosecutor because he or she cannot get through to me, I can't make any progress on a case for those three days." Cisco IP Communications provides several features that help forensic scientists complete more cases, more quickly:

- **Individual Extensions and Ring Tones**—Each lab now has approximately 120 extensions—one for each employee. All scientists selected individual ring tones that they can recognize if they are working in common lab areas. And because forensic scientists now receive phone calls at their own extensions, they no longer spend valuable time answering calls that were misdirected.
- **Voice Mail**—"Voice mail is enormously helpful because if I have my hands on evidence, I can't get to the phone," Gamette says. "Now I can listen to the message and get back to the caller immediately after I remove my gloves." Crime lab employees can check voice mail from any office in the state, while traveling, or from home. "I frequently spend four or five hours driving to court, and in the past I was completely out of touch until I returned to the office," Gamette explains. "Now I can check voice mail periodically during the drive, and the detectives appreciate not having to wait so long for a response." If crime lab employees receive a voice mail intended for someone else, they can easily forward it directly to the appropriate mailbox.

- **Cisco MeetMe Audio Conferencing**—Employees can use their Cisco IP phones to set up and conduct voice conferences, avoiding the delays and costs of traveling to meetings. In the past, this could take up to 320 hours per month in total for the labs' approximately 80 employees—time now freed for investigations.
- **Call Transferring**—Previously, when a caller dialed an agency and asked for an employee in another office, the call could not be transferred because of the disparate phone systems. Instead, whoever answered would have to write down the message, look up the employee's office location in a paper directory, call that office, and then dictate the message. Now employees can transfer calls easily, and can find extensions quickly through a directory that appears on the built-in display of Cisco IP phones.
- **Call Parking**—Crime lab employees are often away from their desks. An employee who answers a call intended for someone else can "park" the call and use the Cisco IP phone to page the person, who can answer the call from any other Cisco IP phone. This improves responsiveness by helping to avoid a cycle of missed calls.

Greater Accuracy in Communications

The ability to forward voice mail messages preserves accuracy in a profession where a mistake in transcription can make a big difference—for example, "Yes, those tests are positive," versus "We're not positive about the tests yet." "By forwarding a voice mail, I make sure that the recipient hears the original message, not my interpretation," says Gamette.

Faster Deployment of Task Forces in New Buildings

The Cisco foundation infrastructure reduces the time and effort needed to provision voice and data services for a new task force. "The next time we move into a new building we won't need to develop and program a new phone switch," says Russo. The Cisco foundation infrastructure will also make it easier for Washington State Patrol to introduce additional voice, video, and data services in the future.

Increased Productivity for IT Staff

Like many state agencies, Washington State Patrol needs a flexible infrastructure that can adapt to changing technology, laws, and regulations. "Our centralized voice and data solutions makes it possible to deploy technicians to strategic projects such as computer-aided dispatch or mobile data services—not mundane tasks like telephone moves, adds, and changes," says Palmer. Now crime lab employees who move to a new office location can simply connect their IP phone in a new location, with no assistance from IT.

Russo adds, "Our Cisco foundation infrastructure is manageable and scalable. We'll no longer find ourselves in the position of receiving funding for a new application, only to realize that deploying the application requires a much more expensive infrastructure upgrade. We can add bandwidth incrementally, as needed."

NEXT STEPS

The new standards-based network will enable Washington State Patrol to participate in the Olympic Public Safety Communications Alliance Network (OPSCAN), funded by the Federal Emergency Management Agency (FEMA) to enable public safety agencies to communicate with each other using their existing radio systems. OPSCAN, too, is based on a Cisco foundation infrastructure. More than 30 Cisco routers link existing radio systems with new, cross-band radio repeaters to allow federal, state, and local government agencies to communicate. Washington State Patrol will be one of several agencies to provide LMR over IP, helping to solve the interoperability problems that have impeded recent disaster-response efforts in the United States.

PRODUCT LIST

Routing and Switching
- Cisco 2800 Series Integrated Services Router
- Cisco Catalyst 3750 Switch

Network Management
- CiscoWorks VPN Security Management Solution (VMS)
- CiscoWorks IP Telephony Environment Monitor (ITEM)

Security and VPN
- Cisco Adaptive Security Appliance (ASA)
- Cisco VPN 3005 Concentrator

Voice and IP Communications
- Cisco CallManager Software
- Cisco Unity Unified Messaging
- Cisco 7940 IP phones

"Like other state and local government agencies, we need to make the most of limited funding," says Palmer. "That requires forming partnerships and then building solutions one component or piece at a time. The fact that Cisco solutions are standards-based helps us develop those partnerships."

For More Information

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To find out more about Cisco Voice and IP Communications Solutions, go to: http://www.cisco.com/go/voice

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